

WE CLAIM:

1. An isolated GlcNAc-TV-b or GlcNAc-TV-c nucleic acid molecule of at least 30 nucleotides which hybridizes to SEQ ID NO. 1 or the complement of SEQ ID NO. 1, under stringent hybridization conditions.
2. An isolated GlcNAc-TV-b or GlcNAc-TV-c nucleic acid molecule which comprises:
 - (i) a nucleic acid sequence encoding a protein having substantial sequence identity preferably at least 70%, more preferably at least 75% sequence identity, with an amino acid sequence of SEQ. ID. NO. 2, 4, 6, 10, or 12;
 - (ii) nucleic acid sequences complementary to (i);
 - (iii) nucleic acid sequences differing from any of the nucleic acids of (i) or (ii) in codon sequences due to the degeneracy of the genetic code;
 - (iv) a nucleic acid sequence comprising at least 18 nucleotides and capable of hybridizing under stringent conditions to a nucleic acid sequence of SEQ. ID. NO. 1, 3, 5, 9, or 11 or to a degenerate form thereof;
 - (v) a nucleic acid sequence encoding a truncation, an analog, an allelic or species variation of a protein comprising an amino acid sequence of SEQ. ID. NO. 2, 4, 6, 10, or 12; or
 - (vi) a fragment, or allelic or species variation of (i), (ii) or (iii)
3. An isolated nucleic acid GlcNAc-TV-b or GlcNAc-TV-c nucleic acid molecule which comprises:
 - (i) nucleic acid sequence having substantial sequence identity preferably at least 70%, more preferably at least 75% sequence identity with a nucleotide sequence of SEQ. ID. NO. 1, 3, 5, 9, or 11;
 - (ii) nucleic acid sequences complementary to (i), preferably complementary to a full nucleic acid sequence of SEQ. ID. NO. 1, 3, 5, 9, or 11;
 - (iii) nucleic acid sequences differing from any of the nucleic acids of (i) to (ii) in codon sequences due to the degeneracy of the genetic code; or
 - (iv) a fragment, or allelic or species variation of (i), (ii) or (iii).
4. An isolated nucleic acid molecule which encodes a protein which binds an antibody of a GlcNAc-TV-b or GlcNAc-TV-c protein.
5. An isolated nucleic acid molecule as claimed in any of the preceding claims fused to a nucleic acid which encodes a heterologous protein.
6. A vector comprising a nucleic acid molecule of any of the preceding claims.
7. A host cell comprising a nucleic acid molecule of any of the preceding claims.
8. An isolated GlcNAc-TV-b or GlcNAc-TV-c protein comprising an amino acid sequence of SEQ. ID. NO. 2, 4, 6, 10, or 12.
9. An isolated protein having at least 70% amino acid sequence identity to an amino acid sequence of SEQ. ID. NO. 2, 4, 6, 10, or 12.

10. A method for preparing a protein as claimed in claim 8 comprising:
 - (a) transferring a vector as claimed in claim 6 into a host cell;
 - (b) selecting transformed host cells from untransformed host cells;
 - (c) culturing a selected transformed host cell under conditions which allow expression of the protein; and
 - (d) isolating the protein.
11. A protein prepared in accordance with the method of claim 10.
12. An antibody having specificity against an epitope of a protein as claimed in claim 8.
13. An antibody as claimed in claim 12 labeled with a detectable substance and used to detect the protein in biological samples, tissues, and cells.
14. A probe comprising a sequence encoding a protein as claimed in claim 8, or a part thereof.
15. A method of diagnosing and monitoring conditions mediated by a protein as claimed in claim 8 by determining the presence of a nucleic acid molecule as claimed in any of the preceding claims or a protein as claimed in any of the preceding claims.
16. A method for identifying a substance which associates with a protein as claimed in claim 8 comprising (a) reacting the protein with at least one substance which potentially can associate with the protein, under conditions which permit the association between the substance and protein, and (b) removing or detecting protein associated with the substance, wherein detection of associated protein and substance indicates the substance associates with the protein.
17. A method as claimed in claim 16 wherein association of the protein with the substance is detected by assaying for substance-protein complexes, for free substance, for non-complexed protein, or for activation of the protein.
18. A method for evaluating a compound for its ability to modulate the biological activity of a protein as claimed in claim 8 comprising providing a known concentration of the protein with a substance which associates with the protein and a test compound under conditions which permit the formation of complexes between the substance and protein, and removing and/or detecting complexes.
19. A method for detecting a nucleic acid molecule encoding a protein comprising an amino acid sequence of SEQ. ID. NO. 2, 4, 6, 10, or 12 in a biological sample comprising the steps of:
 - (a) hybridizing the nucleic acid molecule of claim 1 to nucleic acids of the biological sample, thereby forming a hybridization complex; and
 - (b) detecting the hybridization complex wherein the presence of the hybridization complex correlates with the presence of a nucleic acid molecule encoding the protein in the biological sample.
20. A method as claimed in claim 19 wherein nucleic acids of the biological sample are amplified by the polymerase chain reaction prior to the hybridizing step.

21. A method for treating a condition mediated by a protein as claimed in claim 8 comprising administering an effective amount of an antibody as claimed in claim 12 or a substance or compound identified in accordance with a method claimed in claim 16 or claim 18.
22. A composition comprising one or more of a nucleic acid molecule or protein claimed in any of the preceding claims, or a substance or compound identified using a method as claimed in any of the preceding claims, and a pharmaceutically acceptable carrier, excipient or diluent.
23. Use of one or more of a nucleic acid molecule or protein claimed in any of the preceding claims, or a substance or compound identified using a method as claimed in any of the preceding claims in the preparation of a pharmaceutical composition for treating a condition mediated by a protein as claimed in claim 8.
24. A gene-based therapy directed at the brain comprising a polynucleotide comprising all or a portion of a regulatory sequence of SEQ. ID. NO. 7 or 8.
25. A method for preparing an oligosaccharide comprising contacting a reaction mixture comprising an activated GlcNAc, and an acceptor in the presence of a protein as claimed in claim 8 or 9.